

July 14, 1965

STATINTL

[Redacted]

Fort Davis Station
Washington, D.C. 20020

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Dear [Redacted]

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Enclosed please find five (5) copies of our
Progress Report for the month of June, 1965.

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Very truly yours,

[Redacted]

RIT:reb
Enc.

Comptroller

Declass Review by NIMA/DOD


July 13, 1965

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Monthly Progress Report No. 4

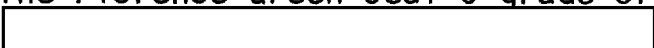
Contract 

Period - Month of June 1965

1. PROGRESS ACCOMPLISHED

1.1 Investigation into the voltage divider effect is being continued.

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1.1.1 The Florence Green Seal 8 grade of Zinc Oxide obtained  has been found to give the best photoconductive response to ultraviolet light.

A Zn O/aroclor melt has exhibited a change from almost infinite resistance, in the dark, to a resistance of less than 200,000 ohms when subjected to an ultraviolet source.

1.1.2 Various modifications of the voltage divider apparatus are now being studied to determine the parameters which are required for the different cell components.

1.2 A major part of the program emphasis is now being directed toward the Photo-Ionic Effect.

1.2.1 Our initial tests were comprised of pulsing a cell containing one solution with a voltage. When the ions separate a current pulse which is generated can be measured.

This cell is put in a bridge circuit with a balancing capacitor. In this way only the current pulse produced by the ions can be read and measured across the bridge. There will be no effect unless photo-ions are produced by the ultraviolet light.

1.2.2 A sample of quinone dissolved in toluene was tested in the bridge circuit and a definite current difference was observed across the cell when exposed to the ultraviolet light. However, it was found that this could

only be repeated with freshly prepared solution. It appears that a reaction takes place between toluene and quinone which destroys the photo-ionic effect in a short period of time.

There are many other prospective photo-ionic materials that will be much more stable. These will be evaluated.

1.2.3 We are presently working with some known photo-ionic effects to guarantee that we can reproduce them in our own equipment and thus obtain a reference standard. Once this is done, we will be sure that any response that is observed with ultraviolet light is the desired effect.

2. DIFFICULTIES ENCOUNTERED

2.1 No difficulties were encountered.

3. FUTURE WORK

3.1 Studies that have been initiated will be continued.

3.2 Emphasis will be put on the photo-ionic effect.

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